

**COURSE DATA****Data Subject**

Code	43813
Name	Environmental impact assessment
Cycle	Master's degree
ECTS Credits	3.0
Academic year	2022 - 2023

Study (s)

Degree	Center	Acad. year	Period
2227 - M.U. en Ingeniería Ambiental	School of Engineering	1	Second term
3132 - Chemical, Environmental and Process Engineering	Doctoral School	0	First term

Subject-matter

Degree	Subject-matter	Character
2227 - M.U. en Ingeniería Ambiental	4 - Environmental management	Obligatory
3132 - Chemical, Environmental and Process Engineering	1 - Complementos de Formación	Optional

Coordination

Name	Department
SECO TORRECILLAS, AURORA	245 - Chemical Engineering

SUMMARY

Professor UPV: Inmaculada Romero Gil

This subject aims to sensitize the student about the need to study and adequately anticipate the consequences that human actions, and in this case, the projects, have on the environment, understood in a broad sense. Therefore, the subject is designed to provide the student with the necessary knowledge to develop the tools of decision making, analysis, prevention and mitigation / compensation of environmental damage caused by the projects to be developed; thereby allowing a development compatible with the maintenance of environmental quality. Logically, all this implies the need to provide the necessary knowledge to use and / or structure the data of the project and the environment for a correct prognosis and evaluation of the environmental effects that the project will produce. This subject allows students to receive basic training in concepts, regulations, methods and tools for the management of ecosystems that may be affected by any type of project, work or activity. It will allow them to adapt



within this field in an interdisciplinary, complex and dynamic work environment. For this, it is necessary to understand the basic institutional and legal framework in which the Environmental Impact Studies are carried out, and to know the content and procedure of the Impact Studies.

PREVIOUS KNOWLEDGE

Relationship to other subjects of the same degree

There are no specified enrollment restrictions with other subjects of the curriculum.

Other requirements

No enrollment restrictions have been specified with other subjects of the curriculum.

Recommended previous knowledge:

(44718) Assessment of environmental quality

(43806) Transport of pollutants in the environment

(43812) Analysis and application of environmental legislation

OUTCOMES

2227 - M.U. en Ingeniería Ambiental

- Students should apply acquired knowledge to solve problems in unfamiliar contexts within their field of study, including multidisciplinary scenarios.
- Students should be able to integrate knowledge and address the complexity of making informed judgments based on incomplete or limited information, including reflections on the social and ethical responsibilities associated with the application of their knowledge and judgments.
- Students should communicate conclusions and underlying knowledge clearly and unambiguously to both specialized and non-specialized audiences.
- Students should demonstrate self-directed learning skills for continued academic growth.
- Students should possess and understand foundational knowledge that enables original thinking and research in the field.
- Identify and apply technologies, tools and techniques in the field of environmental engineering.
- Assume with responsibility and ethics the Environmental Engineer role in a professional context.
- Adapt to changes, being able to apply the principles of Environmental Engineering to unknown cases and use new and advanced technologies and other relevant developments, with initiative and entrepreneurial spirit.
- Identify, declare and entirely analyze environmental problems.
- Assess the application of measures for the pollution prevention and the recovery, protection and improvement of environmental quality.



- Understand and apply environmental national and international legislation, adapting environmental solutions to these regulations.
- Apply methodologies for evaluation and correction of environmental impact.
- Apply standard methodologies for the analysis and evaluation of environmental risks.
- Evaluate the environmental quality of water from a global point of view, especially when there is a risk to public health.
- Evaluate the environmental quality of the air from a global point of view, especially when there is a risk to public health.
- Evaluate the environmental quality of soils from a global point of view, especially when there is a risk to public health..

LEARNING OUTCOMES

- 1 Analyze, prevent and correct environmental damage, protection of the environment and improvement of environmental quality, in the face of various problems.
- 2 Apply the knowledge acquired in other disciplines to evaluate the environmental effects that the different actions have on the environmental components
- 3 Assess and quantify environmental impacts
- 4 Understand and exploit the information of an environmental inventory to be able to apply it to the environmental impact study
- 5 Mitigate and correct environmental impacts using corrective measures
- 6 Propose the restoration measures necessary to return an ecosystem to its preoperational situation

DESCRIPTION OF CONTENTS

1. INTRODUCTION AND LEGAL FRAMEWORK

1. Introduction to the environmental impact assessment
2. Legal framework of the EIA

2. DESCRIPTION OF THE PROJECT AND ALTERNATIVES

1. Physical description and uses of resources
2. Description of the operation of the installation
3. Pollution
4. Enumeration of actions

**3. ENVIRONMENTAL INVENTORY**

1. Description of the physical environment
2. Description of the socio-economic and cultural environment
3. Description of aquatic biocenosis
4. Description of terrestrial biocenosis

4. IDENTIFICATION, DESCRIPTION, CHARACTERIZATION AND EVALUATION OF IMPACTS

1. Introduction
2. Transformations and effects of discharges of different substances
3. Effects of various projects

5. METHODS OF SUMMARY, SCHEMATIZATION AND EVALUATION**6. PROTECTION, CORRECTION, MITIGATION AND COMPENSATION MEASURES****7. ASSESSMENT VIGILANCE PROGRAM****WORKLOAD**

ACTIVITY	Hours	% To be attended
Computer classroom practice	10,00	100
Theory classes	9,00	100
Classroom practices	5,00	100
Group work	3,00	100
Theoretical and practical classes	3,00	100
Attendance at events and external activities	2,00	0
Development of group work	3,00	0
Study and independent work	10,00	0
Preparation of evaluation activities	5,00	0
Preparing lectures	15,00	0
Preparation of practical classes and problem	10,00	0
TOTAL	75,00	



TEACHING METHODOLOGY

The training activities will be developed according to the following distribution:

- Theoretical activities.

Description: In the theoretical classes the topics will be developed providing a global and integrating vision, analyzing in greater detail the key aspects and of greater complexity, promoting, at all times, the participation of the student. We will use a participatory master class model.

In this way, the fundamental aspects of each topic will be addressed and the most convenient work methodology will be presented. On the other hand, the participation of the student in certain aspects of the subject that will be presented at certain times will be encouraged.

- Practical activities.

Description: They complement the theoretical activities in order to apply the basic concepts and expand them with the knowledge and experience that they acquire during the realization of the proposed works. The activities are proposed as the resolution of partial aspects of the memory-summary of real environmental impact assessments. The student will be provided with explanatory methodological guides and will be guided and tutored in the classes for these activities. The student does this work in small groups that are established at the beginning of the course.

There is also a simulation practice to be carried out in the computer classroom. The student who will have prepared the practice in advance must do some practical exercises. The analysis of the results will be guided and supervised by the teacher.

- Student's personal work.

Description: Realization (outside the classroom) of the resolution of partial aspects of the memory-summary of real environmental impact assessments with the help of the explanatory methodological guides, and the reports of the practical sessions. This section also includes the preparation of classes and exams (study). Thus, this task will be carried out individually trying to promote autonomous work.

In order for the method proposed in this subject to be successful, the student will have a preparation material for the class, a real case that will exemplify and allow discussion about the subject that will be developed in the class. The student will prepare the class by reading the materials and individually study each class, prioritizing their ability to analyze.

- Work in small groups.

Description: Realization, by small groups of students (2-4) of work and questions outside the classroom. This task complements the individual work and fosters the ability to integrate into work groups, enhancing collaborative work.

- Evaluation.

Description: Realization of individual evaluation questionnaires in the classroom with the presence of the teacher.

The e-learning platform (Virtual Classroom of the Universitat de València and / or PoliformaT of the Polytechnic University of Valencia) will be used as a communication support with the students. Through it you will have access to all the didactic material used in class.



EVALUATION

There will be a written test of open answer to evaluate the comprehension and acquisition of the theoretical knowledge acquired throughout the course (40% of the final grade). For the practical part (60% of the final grade), a Case Study is scheduled, which will be carried out as the theoretical part is taught. The delivery of the final document of the practical part will be valued at 60%. To be able to pass the student will have to take a grade equal to or greater than 4.0 in each of the parties, otherwise a recovery test will be performed on the part not exceeded in the period reserved for the recovery phase.

REFERENCES

Basic

- Introducción a la evaluación de impacto ambiental (Inmaculada Romero Gil)

El estudio de impacto ambiental : una introducción (Carlos Martín Cantarino)

Handbook of environmental impact assessment. Volume 1, Environmental impact assessment : process, methods and potential

Handbook of environmental impact assessment. Volume 2, Environmental impact assessment in practice : impact and limitations

Environmental impact assessment